

# **EXHIBIT 1**

# **REDACTED**

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UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF TEXAS

STATE OF TEXAS et al.,  
Plaintiffs

vs.

GOOGLE LLC,  
Defendant

Case Number 4:20-cv-00957

**EXPERT REPORT OF JEFFREY S. ANDRIEN**

**JUNE 7, 2024**

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respectfully reserve the right to revise or expand my opinions to reflect any additional opinions I may formulate based upon newly acquired information that may become available to me up to and during the time of trial, including but not limited to Google or any third-parties making additional witnesses available for depositions, further production of documents or other materials by Google or any third-parties, and any further responses, supplements, or amendments to any discovery responses. I also reserve the right to respond to opinions of expert witnesses engaged by Google.

10. In connection with my anticipated trial testimony in this action, I may use as exhibits various documents produced in this litigation, which refer to or relate to the matters discussed in this report. In addition, I may create or assist in the creation of demonstrative exhibits to assist me in my testimony.

## **II. SUMMARY OF OPINIONS**

11. Based on my analysis of documents and information I have reviewed in this case, and my education, training, and experience, I hold the following opinions:

- a. Google's financial performance during the period 2013 to present has been extraordinary.<sup>5</sup>
  - i. From 2013 to 2023, Google's gross revenue totaled \$1.73 trillion, and its operating income totaled \$441.98 billion. Google's revenue grew by a compound annual growth rate ("CAGR") of 18.7% from 2013 to 2023. To put this into perspective, the revenue of the average S&P 500 company experienced a 5.0% CAGR over the same period. Google's operating profit

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<sup>5</sup> Throughout this report, I use information currently available to me, including annual income statement data through December 31, 2023, to make comparisons across years and calculate growth rates. I also report Google's Q1 2024 revenues and earnings based on its latest available quarterly filing. Finally, I report balance sheet data as of March 31, 2024, based on Google's latest available quarterly filings. I reserve the right to update my analyses based on updated financial and other information made available by Google, as well as publicly available information, up to and during the time of trial.

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has grown by a CAGR of 18.5% from 2013 to 2023. The operating profit of the average S&P 500 company experienced a 5.6% CAGR over the same period.

- ii. As of March 31, 2024, Google held cash, cash equivalents, and marketable securities totaling \$108.09 billion.
- iii. Google is the fourth largest publicly traded company in the world by market capitalization, with a market capitalization of \$2.15 trillion as of June 3, 2024.

b. Google's growth and profitability have been driven by advertising. Google's advertising operating profit for 7 of the reported 11 years 2013 to 2023 exceeded its overall operating profit.

c. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

d. The relevant metric to count violations is all AdX Open Auctions during the time that the misconduct occurred. I have determined that:

- i. From 3/31/2015 to 9/25/2019 there were [REDACTED]

[REDACTED].

- ii. From 8/20/2015 to 7/17/2018 there were [REDACTED]

[REDACTED]

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iii. From 11/11/2013 to present [REDACTED]

[REDACTED]

iv. From 11/20/2019 to present [REDACTED]

[REDACTED]

e. Applying each Plaintiff State's maximum allowable statutory penalty to estimated violations in each state results in a penalty of [REDACTED].

f. To deter Google from continuing its misconduct, the penalty must eliminate Google's financial incentive to engage in the misconduct. At minimum, this would involve penalizing Google for the total incremental benefits (including future benefits) from the alleged misconduct.

- i. The alleged misconduct provides Google with direct and indirect financial benefits.
- ii. I am unable to determine Google's total incremental benefits from the misconduct because Google has not produced information sufficient to determine even the direct benefits from the alleged misconduct, much less the indirect benefits from the alleged misconduct. Additionally, the benefits from both the alleged deceptive trade practices misconduct and the separate antitrust conduct alleged in this case play a role within an overall scheme to dominate the display advertising industry.
- iii. Google's estimated historical operating profits from the display advertising vertical related to the Ad Tech tools at issue that can be associated with the Plaintiff States are insufficient and inappropriate to deter future misconduct.

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g. Google has paid numerous fines and entered into several settlements related to past misconduct or alleged misconduct. These fines and settlements have not deterred Google from continuing to engage in misconduct.

h. Based on my analysis of the three factors I have considered, the trier of fact should consider a penalty range of [REDACTED] per violation. However, to the extent the trier of fact considers the additional relevant factors, revisions to this per violation amount may be appropriate. Given this range of penalty per violation and my violation counts, the total penalties related to each misconduct for their respective periods and associated with the Plaintiff States are as follows:

- i. RPO – [REDACTED]
- ii. DRS – [REDACTED]
- iii. Bernanke – [REDACTED]
- iv. Equal Footing on AdX – [REDACTED]

If the trier of fact finds that Google is liable for all four of the above misconducts and adopts my violation counts and penalties, the maximum penalty is [REDACTED]

[REDACTED]. My analysis allows for flexibility to allow the trier of fact to determine penalties regardless of the combination of periods, Plaintiff States, or conducts for which they find Google liable in this matter.

- i. Google can pay a penalty as high [REDACTED] without impacting its day-to-day operations or bankrupting the company.

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auction participants and causing them to behave differently than they would have but for Google's misconduct.

### i. Reserve Price Optimization

30. I understand that with Reserve Price Optimization ("RPO"), Google used buyer's historical bidding information and other transaction data prior to seeing live bids in order to determine a reserve price that Google believed would optimize AdX revenue, and that Google then used this artificial reserve price in AdX instead of the reserve price set by the publisher, thus overriding the reserve price that had been set by the publisher.<sup>78</sup> In addition, RPO was used to set the reserve price just below the highest bidder's true value, or "as close to the anticipated first price as possible in order to trade buyer for seller surplus."<sup>79</sup> This phenomenon is illustrated in **Figure 3**, below.<sup>80</sup>

**Figure 3**

#### Reserve Price Optimization: Guessing top bid



<sup>78</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 9. See also, GOOG-NE-04719370; GOOG-AT-MDL-004408571 at -573; GOOG-NE-06842715 at -718.

<sup>79</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 9.

<sup>80</sup> GOOG-NE-13202730 at -739.

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31. I also understand that while RPO was launched in phases between March/April and October 2015,<sup>81</sup> Google did not announce this program to its customers prior to its launch.<sup>82</sup> In fact, Google did not announce the program until May 12, 2016, over a year after its initial rollout, which it announced in a blog post under the name “optimized pricing.”<sup>83</sup> At that time, publishers could not opt out of RPO.<sup>84</sup> [REDACTED]

[REDACTED]  
[REDACTED]  
<sup>85</sup> In any event, on or about September 25, 2019, Google publicly migrated to a first-price auction format on AdX, thus effectively ending the RPO program in what Google had represented to be a second price auction.<sup>86</sup>

32. I also understand that Google concealed material information from publishers and advertisers during the period RPO was concealed, and intended to communicate about the program only if it was noticed externally. For example, a March 2015 internal email states, “We do not plan to announce anything externally for now, and the affected commercialization teams are ready with a PR approved reactive message when someone notices.”<sup>87</sup> Another March 2015 internal email states, “when it [RPO] is noticed externally (likely), we use the non-specific language in the

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<sup>81</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 9; Defendant Google LLC’s First Amended Responses and Objections to Plaintiffs’ Third Set of Interrogatories, Responses to Interrogatory No. 6; GOOG-AT-MDL-003996097; GOOG-DOJ-29803801; GOOG-AT-MDL-004408571 at -572; GOOG-DOJ-15428245 at -246; GOOG-DOJ-15435288 at -289.

<sup>82</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 9.

<sup>83</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 9. See also, Google Ad Manager “Smarter optimizations to support a healthier programmatic market,” May 12, 2016, available at <https://blog.google/products/admanager/smarter-optimizations-to-support/>, accessed 5/26/2024; GOOG-AT-MDL-001391101; GOOG-AT-MDL-004408571 at -572.

<sup>84</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 9; GOOG-NE-06842715 at -718.

<sup>85</sup> See GOOG-DOJ-15418450; GOOG-AT-MDL-B-001109245. See also, Expert Report of Dr. John Chandler, June 7, 2024, §X.G.

<sup>86</sup> GOOG-DOJ-AT-02202934; “Rolling out first price auctions to Google Ad Manager partners,” Google Ad Manager, September 5, 2019, available at <https://blog.google/products/admanager/rolling-out-first-price-auctions-google-ad-manager-partners>, accessed 4/19/2024. See also Defendant Google LLC’s First Amended Responses and Objections to Plaintiffs’ Third Set of Interrogatories, Responses to Interrogatory No. 6.

<sup>87</sup> GOOG-NE-06591119.

**HIGHLY CONFIDENTIAL****Figure 4**

39. I also understand that in a subsequent iteration of DRS launched in December 2016—referred to as DRSv2—AdX would either decrease AdX’s take rate below 20% or increase AdX’s take rate above 20% to win impressions it would not have won if the take rate were 20%, depending on various factors.<sup>105</sup> Google announced DRSv2 (under a different name) when it was launched and allowed publishers to opt out of the program (if a publisher opted out, DRSv1 was turned off as well), but advertisers and ad buying tools could not.<sup>106</sup> I also understand that DRSv2 tracked “debts” incurred by publishers and advertisers, and that a publisher could see decreased revenues through DRSv2.<sup>107</sup>

40. A third iteration of DRS, tDRS, was implemented in July 2018 (after Google ran experiments in 2017) and replaced DRSv2.<sup>108</sup> The “t” in tDRS stands for “truthful.” I understand

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<sup>105</sup> GOOG-AT-MDL-B-004377628 at -759 and -761; Defendant Google LLC’s First Amended Responses and Objections to Plaintiffs’ Third Set of Interrogatories, Responses to Interrogatory No. 6; GOOG-AT-MDL-001004706 at -743; GOOG-NE-09485306 at -405; GOOG-AT-MDL-008842393 at -403.

<sup>106</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.B.

<sup>107</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.B.

<sup>108</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.C; Google’s First Amended Responses and Objections to Plaintiffs’ Third Set of Interrogatories, Response to Interrogatory No. 6; GOOG-DOJ-13949282 at tab “Q3Q4 2018” row 7.

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the program was revised to adjust the AdX take rate based on a predictive model instead of “peeking” at actual bids and adjusting the revenue share thereafter.<sup>109</sup> tDRS was in place from July 2018 until late 2019, when Google shifted to a first price auction format in AdX.<sup>110</sup>

41. It is my understanding that Google concealed material information from publishers and advertisers by not disclosing DRSv1, which negatively impacted them and prevented them from employing optimal strategies.<sup>111</sup> For example, I understand that but for Google’s omissions, publishers who believed that AdX ran a standard second price auction would have set different reserve prices if they had been aware of DRSv1.<sup>112</sup> Moreover, I understand that by not revealing DRSv1 and leading advertisers to believe the AdX auction was a standard second-price auction, advertisers would engage in suboptimal behavior.<sup>113</sup> For example, if advertisers had known of DRSv1, they could shade their bids to get a higher return.<sup>114</sup>

42. The same is true of DRSv2. I understand that some aspects of DRSv2 were misleading to advertisers and publishers based, in part, on Google’s omissions in clearly disclosing the concept of debt with DRSv2, which mislead both advertisers and publishers regarding how much they are paying or paid out, prevented them from employing optimal bidding strategies, and

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<sup>109</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.C; GOOG-DOJ-AT-02423615.

<sup>110</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.C; Defendant Google LLC’s First Amended Responses and Objections to Plaintiffs’ Third Set of Interrogatories, Responses to Interrogatory No. 6; GOOG-DOJ-15130321; GOOG-DOJ-AT-01509153; GOOG-DOJ-AT-01516187 at -205; “Rolling out first price auctions to Google Ad Manager partners,” Google Ad Manager, September 5, 2019, available at <https://blog.google/products/admanager/rolling-out-first-price-auctions-google-ad-manager-partners>, accessed 4/19/2024.

<sup>111</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.D.1; Section 7.F.2.

<sup>112</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.D.1.

<sup>113</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.F.2.

<sup>114</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.F.2.

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GDN's take rate exceeded or fell below a certain percentage.<sup>124</sup> In August 2015, Google launched Global Bernanke, which I understand maintained a single pool for all publishers across AdX.<sup>125</sup>

45. I also understand that under Projects Bernanke and Global Bernanke, individual publisher revenues could decrease, and both iterations could lead to a reduction in ad quality and revenue per mille for publishers.<sup>126</sup> In addition, I understand that Projects Bernanke and Global Bernanke overcharged advertisers<sup>127</sup> and would decrease the win rate of non-GDN advertisers.<sup>128</sup>

46. I also understand that Google concealed material information from publishers and advertisers by concealing Projects Bernanke and Global Bernanke. For example, all publishers likely would have changed their behavior had they known about Projects Bernanke and Global Bernanke by raising their reserve prices in order to maximize their revenue.<sup>129</sup> Moreover, I understand that because Google never disclosed Projects Bernanke and Global Bernanke to advertisers, advertisers thought they were participating in a true second price auction and bid their true value, but they would have shaded their bids in order to get higher payoffs had they known about Projects Bernanke and Global Bernanke.<sup>130</sup>

47. On or about October 25, 2019, after Google transitioned to a first price auction, Google launched an updated version of Project Bernanke, sometimes called "Alchemist," but referred to herein as "First Price Bernanke."<sup>131</sup> Under First Price Bernanke, I understand that GDN

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<sup>124</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.A.

<sup>125</sup> Defendant Google LLC's First Amended Responses and Objections to Plaintiffs' Third Set of Interrogatories, p. 13. I understand Global Bernanke had certain per publisher requirements related to margin and publisher revenue. See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.B.

<sup>126</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.C.1, Section 8.C.2.

<sup>127</sup> See Expert Report of Dr. Joshua Gans, June 7, 2024, Section VIII.B.

<sup>128</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.E.1.

<sup>129</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.C.3.

<sup>130</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.E.2.

<sup>131</sup> GOOG-DOJ-AT-02224828 at -828; Defendant Google LLC's First Amended Responses and Objections to Plaintiffs' Third Set of Interrogatories, Responses to Interrogatory No. 6. See also Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.G referring to this version of Bernanke as "First-Price Project Bernanke."

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<sup>125</sup> Defendant Google LLC's First Amended Responses and Objections to Plaintiffs' Third Set of Interrogatories, p. 13. I understand Global Bernanke had certain per publisher requirements related to margin and publisher revenue. See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.B.

<sup>126</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.C.1, Section 8.C.2.

<sup>127</sup> See Expert Report of Dr. Joshua Gans, June 7, 2024, Section VIII.B.

<sup>128</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.E.1.

<sup>129</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.C.3.

<sup>130</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.E.2.

<sup>131</sup> GOOG-DOJ-AT-02224828 at -828; Defendant Google LLC's First Amended Responses and Objections to Plaintiffs' Third Set of Interrogatories, Responses to Interrogatory No. 6. See also Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.G referring to this version of Bernanke as "First-Price Project Bernanke."

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Google Ads, which I understand are the products at issue in this matter.<sup>258</sup> The P&Ls available to me in production include information on revenue,<sup>259</sup> costs, and operating profit for these various Google display advertising products for the years 2013 to 2022. To extrapolate to the year 2023, I conservatively assume the same revenue, costs, and operating profit in 2023 as there were in 2022, i.e. I assume no growth.

93. To estimate the share of Google's overall display advertising revenue and profit described above that is attributable to the Plaintiff States, I take two additional steps. First, I estimate Google's U.S. display advertising revenues and profits by multiplying Google's annual display advertising revenues and profits from Google's P&Ls as described above by the percent of its overall revenues attributable to the United States in each respective year as reflected in Google/Alphabet SEC filings.

94. I then estimate display advertising revenue and profit associated with the Plaintiff States. The U.S. Census Bureau collects an assortment of data about the people and economy of the United States, including data on internet use, which it has collected as a part of the American Community Survey (“ACS”) since 2013.<sup>260</sup> ACS data is available for the United States as a whole,

A horizontal bar chart showing the percentage of households without computer and internet use by race and ethnicity. The y-axis lists categories: "All races and ethnicities," "White, non-Hispanic," "Black, non-Hispanic," "American Indian, Alaskan Native, and Hawaiian/Pacific Islander," and "Asian and Pacific Islander." The x-axis represents the percentage from 0% to 25%. Each category has a black bar with a white numerical label indicating the percentage.

Category	Percentage
All races and ethnicities	258
White, non-Hispanic	182
Black, non-Hispanic	142
American Indian, Alaskan Native, and Hawaiian/Pacific Islander	112
Asian and Pacific Islander	102

Source: "Households Without Computer and Internet Use," U.S. Census Bureau, available at [\[link\]](#)

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as well as for individual states and smaller geographic areas.<sup>261</sup> In each year, I take the share of each state's households that have an internet subscription, as provided by the ACS,<sup>262</sup> and multiply that share by the population of the state in order to estimate the number of persons in each state that have an internet subscription in each year 2013 through 2022. I then perform the same operation for the United States overall in each year from 2013 through 2022. The U.S. Census Bureau has not yet released 2023 ACS data, thus I assume 2023 figures are equal to 2022 figures. Finally, I use this ratio (each state's persons with internet subscriptions versus all Americans with internet subscriptions) and apply it to Google's U.S. display advertising revenue and profit in each year as described above to estimate Google's display advertising revenue and profit associated with each state for the years 2013 through 2023.

95. **Table 1** below presents the results of the methodology described above for each year from 2013 through 2023.

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<sup>261</sup> American Community Use Survey Information Guide, U.S. Census Bureau, October 2017, available at [https://www.census.gov/content/dam/Census/programs-surveys/acs/about/ACS\\_Information\\_Guide.pdf](https://www.census.gov/content/dam/Census/programs-surveys/acs/about/ACS_Information_Guide.pdf), accessed 11/13/2023.

<sup>262</sup> The ACS includes two types of estimates – 1-year and 5-year. I use the 1-year estimates in years 2013-2019, and 2021-2022. For 2020, I have used 5-year results as 1-year results were not available due to the disruption of the COVID-19 pandemic. See “Pandemic Impact on 2020 American Community Survey 1-Year Data,” United States Census Bureau, October 27, 2021, available at <https://www.census.gov/newsroom/blogs/random-samplings/2021/10/pandemic-impact-on-2020-acss-1-year-data.html>, accessed 1/10/2024.

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**Table 1**  
**Google Display Advertising Revenue and Profit**  
**Plaintiff States**  
**2013-2023**

Year	Total Display Advertising Revenue (\$ in millions)	Total Display Advertising Operating Profit (\$ in millions)
2013	\$77.47	\$13.91
2014	\$1,098.27	-\$8.95
2015	\$1,280.81	-\$53.36
2016	\$1,591.97	-\$93.37
2017	\$1,917.39	-\$39.75
2018	\$2,248.64	\$97.38
2019	\$2,489.06	\$163.03
2020	\$2,718.95	\$143.41
2021	\$3,731.42	\$392.78
2022	\$3,978.76	\$354.08
2023	\$3,972.42	\$353.52
<b>TOTAL</b>	<b>\$25,105.17</b>	<b>\$1,322.70</b>

**Sources:** Exhibit 1; Exhibit 2; S&P Capital IQ; Alphabet Inc. Form 10-Q for the quarterly period ended March 31, 2024.

## **D. I Understand Google Has Committed Numerous Violations of State Deceptive Trade Practice Statutes**

96. The Plaintiff States allege that Google has violated the deceptive trade practice statutes of the Plaintiff States through multiple programs aimed at manipulating ad auctions, as well as its related deceptive communications, misrepresentations, and omissions. Below I estimate the number of violations that occurred as a result of the misconduct.<sup>263</sup>

97. In order to count violations, I [REDACTED]

[REDACTED] [REDACTED]

<sup>263</sup> I do not include an estimation of violation counts for the Header Bidding claim.

<sup>264</sup> [REDACTED]

[REDACTED]

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[REDACTED]

[REDACTED]

[REDACTED] [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Further, I limit my violation count to those violations associated with the Plaintiff States by applying to my counts the ratio of each Plaintiff State's internet population to that of the United States as a whole, the same ratio described in Section IV.C, above.<sup>266</sup>

98. I have assumed that Google's misconduct indirectly affected [REDACTED]

[REDACTED]<sup>267</sup> While a specific Google program might not have run on each auction during a given period, the misrepresentations of those targeted auctions as second-price auctions, first-price auctions, or that participants were on equal footing in such auctions, and the inability of publishers and advertisers to determine whether and to what

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265 [REDACTED]

266 [REDACTED]

<sup>267</sup> I have been asked to assume based on Dr. Weinberg's report that all auctions during the period in which RPO, DRSSv1, DRSSv2, and Bernanke misconducts were active were affected by the claimed misconduct, whether they were directly targeted by the misconduct or not. I further understand that Google represented in 2019 that all participants were on equal footing in AdX auctions; however, this was not true, due to various auction advantages Google gave to Facebook pursuant to the NBA, as well as the impact of First Price Bernanke. See Expert Report of Dr. Joshua Gans, June 7, 2024; Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 8.G. These advantages created an uneven playing field in all auctions subsequent to Google's disclosure on its website that: "All participants in the unified auction, including Ad Exchange and third-party exchanges, compete equally for each impression on a net basis." See "How Open Bidding Works," Google Ad Manager, November 20, 2019, available at <https://web.archive.org/web/20191120001210/https:/support.google.com/admanager/answer/7128958>, accessed 5/23/2024; Expert Report of Dr. Joshua Gans, June 7, 2024.

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extent Google's programs/conduct applied to a given auction caused publishers and advertisers to behave differently than they would have but for Google's misconduct.<sup>268</sup>

99. **Table 2** below presents a violation count for each of Google's misconducts over the period January 2013 to May 2024 using the methodology for counting violations described above.<sup>269</sup> The violation counts presented in the table below are conservative as I have chosen the full launch date of each auction manipulation as the starting date for counting violations instead of any earlier dates of experimentation, even though I understand that such experiments were run in and impacted live auctions.<sup>270</sup> For example, for RPO, I use March 31, 2015 as the starting date, which Google represents is the date of full RPO launch.<sup>271</sup> For DRS, I use August 20, 2015 as the starting date, which Google represents is the date of DRS v1 launch.<sup>272</sup> For Bernanke, I use November 11, 2013 as the starting date, which is the date Google represented as the full Bernanke

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<sup>268</sup> See Expert Report of Dr. Matthew Weinberg, June 7, 2024, Section 7.F, Section 7.G, Section 8.C, Section 9.B; Expert Report of Dr. John Chandler, June 7, 2024, §X.

<sup>269</sup> [REDACTED]

[REDACTED]  
Further, as I state in this report, I assume [REDACTED]

[REDACTED] I reserve the right to adjust my violation counts. To note, lowering violation counts would lead to a lower overall penalty than I recommend here, which may not provide adequate deterrence to Google as required by several state's deceptive trade practice statutes.

<sup>270</sup> See Expert Report of Dr. John Chandler, June 7, 2024, §X.G.

<sup>271</sup> Defendant Google LLC's First Amended Responses and Objections to Plaintiffs' Third Set of Interrogatories, Responses to Interrogatory No. 6.

<sup>272</sup> Defendant Google LLC's First Amended Responses and Objections to Plaintiffs' Third Set of Interrogatories, Responses to Interrogatory No. 6.

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101. While I provide a violation count of Open Auctions associated with each misconduct in this table, each individual auction should only be counted as one violation. For example, if the trier of fact finds that Google is liable for both RPO and Bernanke, each auction that occurred during the period both misconducts were active should only be counted once as a violation.<sup>279</sup>

**E. Potential Penalties Under State Deceptive Trade Practices Statutes Are Between \$0 and \$25,000 per Violation**

102. As I describe in Section III.F above, under each state's deceptive trade practices statute, the trier of fact can assess a range of penalties up to a certain maximum amount per violation. **Table 3** below lists the maximum penalty per violation by state.

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subperiods (DRSv1, DRSv2, Second Price Bernanke, and First Price Bernanke) in **Exhibit 5**. See **Exhibit 6** for monthly counts of all auctions ("total queries") related to Plaintiff States should the trier of fact find this relevant. <sup>279</sup> I also understand that Nevada's deceptive trade practices statute allows for an additional violation for deceptive conduct in each auction that adversely impacted a Nevada-based consumer, advertiser or publisher and thus conduct related to one auction could be the basis for multiple violations of Nevada's statute. See Nevada Revised Statutes 598.0999, available at <https://www.leg.state.nv.us/nrs/NRS-598.html#NRS598Sec0999>, accessed 4/3/2024; Nevada Revised Statutes 598.0915-598.0925, available at <https://www.leg.state.nv.us/nrs/NRS-598.html#NRS598Sec0999>, accessed 4/3/2024. I conservatively assume that one auction is equivalent to no more than one violation.

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**Table 3**  
**Maximum Penalty**  
**State Deceptive Trade Practice Statutes**

State/Territory	Maximum Penalty per Violation	State/Territory	Maximum Penalty per Violation
Alaska	\$ 25,000	Montana	\$ 10,000
Arkansas	\$ 10,000	Nevada	\$ 15,000
Florida	\$ 10,000	North Dakota	\$ 5,000
Idaho	\$ 5,000	Puerto Rico	\$ 5,000
Indiana	\$ 5,000	South Carolina	\$ 5,000
Kentucky	\$ 2,000	South Dakota	\$ 2,000
Louisiana	\$ 5,000	Texas	\$ 10,000
Mississippi	\$ 10,000	Utah	Uncapped
Missouri	\$ 1,000		

**Sources:** Texas Deceptive Trade Practices Act; Alaska Unfair Trade Practices and Consumer Protection Act; Arkansas Deceptive Trade Practices Act; Florida Deceptive and Unfair Trade; Idaho Consumer Protection Act; Idaho Rules of Consumer Protection; Indiana Deceptive Consumer Sales Act; Practices Act; Kentucky Revised Statutes Chapter 367; Louisiana Unfair Trade Practices and Consumer Protection Law; Mississippi Consumer Protection Act; Missouri's Merchandising Practices Act; Montana's Unfair Trade Practices and Consumer Protection Act; Nevada Deceptive Trade Practices Act; North Dakota Century Code; The Puerto Rico Antitrust Act; South Carolina Unfair Trade Practices Act; South Dakota Codified Laws; Utah Consumer Sales Practices Act.

103. In this section, I present the maximum penalty amount related to Google's misconduct based upon the maximum penalty per violation in each Plaintiff State and the maximum number of violations determined in the previous section.<sup>280</sup> While this figure represents the maximum potential penalty for the alleged misconducts based upon my analysis, it does not necessarily represent the appropriate penalty in this case, which must be determined based on relevant factors. My understanding is that deterrence of future misconduct, the history of past violations, and the economic impact of the penalty on the offending party are all relevant factors to guide a determination of civil penalties related to the misconduct at issue in this matter, although, as noted above there are other factors also relevant to determining the appropriate penalty amounts.

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<sup>280</sup> The maximum number of violations is the total count related to Project Bernanke in **Table 2**, above.

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relevant markets,<sup>299</sup> and further that publishers are locked in to using the DFP ad server.<sup>300</sup> Thus Google's deceptive misconduct affecting DFP publishers on AdX is enhanced because of publisher difficulty in leaving the platform – they cannot easily switch to a non-deceptive competitor. As I explain above, due to indirect network effects, increased AdX win rates and revenue from the deceptive misconduct results in attracting more publishers and advertisers to Google's platform, furthering Google's monopoly position. Hence, each type of alleged conduct reinforces the other.

115. The deceptive misconduct alleged in this matter is thus properly viewed as part of an overall scheme by Google to dominate and maintain its place in the display advertising industry using various levers at its disposal, including the misconduct at issue. Google gained both direct and indirect benefits as a result of its misconduct.

## **ii. Quantification of Google's Benefits**

116. Ideally, Google's benefits from the alleged misconduct should be measured as the incremental benefits it obtained by engaging in the misconduct. Such an analysis is commonly referred to as a “but for” analysis and involves comparing Google's actual financial position given the misconduct that occurred (including past profits, market position, and expected future profits), to the financial position Google would have been in but for the misconduct. The concept of a “but-for” analysis is well established in the context of quantifying damages and other forms of monetary relief, and therefore, is instructive in determining how such analyses should be performed for the purposes of determining statutory penalties as well. For example, unjust enrichment, a form of monetary relief, is measured as the difference between the profits that the defendant actually

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<sup>299</sup> Dr. Gans states that “Google's DFP has monopoly power in the market for publisher ad servers for selling open web display advertising space” and that “AdX has monopoly power in the market for ad exchanges for transacting indirect open web display advertising.” See Expert Report of Dr. Joshua Gans, June 7, 2024, Sections V.C, V.D.

<sup>300</sup> Expert Report of Dr. Joshua Gans, June 7, 2024, Section VI.

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earned and the profits they would have earned but for the misconduct.<sup>301</sup> Similarly, lost profit damages are measured as the difference between the profits that the plaintiff would have earned but for the misconduct and the profits it did earn given that the misconduct that occurred.<sup>302</sup> As yet another example, diminution in business value damages are measured as the difference between the value of the plaintiff's business but for the misconduct and its value given the misconduct that occurred.<sup>303</sup> Because value is based on expected future earnings, such an analysis takes into account the differences in the injured party's market position and the expected future benefits from the market position.

117. Unfortunately, the information required to perform such an analysis in this case is currently not available. I understand that the Plaintiff States have issued requests for information related to the number of impressions affected by certain Google programs at issue in this litigation (including RPO, DRS and Project Bernanke), Google revenue and profits attributable to these programs, and any additional value gained by Google related to these programs. However, to date, that information has not been produced by Google. Instead, [REDACTED], a software engineer at Google, submitted a declaration on May 24, 2024 responding to Plaintiff States' requests in which he stated that: [REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

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<sup>301</sup> Boushie, Kristopher A., et al. *Calculating and Proving Damages*. Law Journal Press, 2011, §1.04[1] at 1-9, §9.10[1] at 9-40.

<sup>302</sup> Boushie, Kristopher A., et al. *Calculating and Proving Damages*. Law Journal Press, 2011, §1.04[1] at 1-7., §9.09[1] at 9-34; Weil, Roman L. et al. *Litigation Services Handbook The Role of the Financial Expert*, John Wiley & Sons, Inc. 2012, Fifth Edition, 4.8.

<sup>303</sup> Boushie, Kristopher A., et al. *Calculating and Proving Damages*. Law Journal Press, 2011, §1.04[1] at 1-9.; Weil, Roman L. et al. *Litigation Services Handbook The Role of the Financial Expert*, John Wiley & Sons, Inc. 2012, Fifth Edition, 4.x.

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[REDACTED]  
[REDACTED]  
[REDACTED] 304

118. As such, to date, Google has not produced information relevant and necessary to quantify the direct benefits, much less the indirect benefits from the alleged misconduct. Given the interconnectedness of the misconduct and the lack of information and data produced to date, I am unable to determine Google's financial benefit absent the misconduct, and therefore, cannot determine the incremental benefit to it from engaging in the misconduct. Additionally, I also cannot isolate the profit or revenue associated with each misconduct on its own. In lieu of an incremental benefits analysis, I consider two alternative quantitative measures – Google's display advertising profit and their display advertising revenue – that provide an indication of the aggregate benefit Google has derived during the period in which it engaged in the misconduct.

119. As I show in **Table 1** above, Google's operating profit and revenue associated with its display advertising segment allocable to the Plaintiff States between 2013 and 2023 totaled \$1.32 billion and \$25.12 billion, respectively. Operating profit measures the income earned from Google's operation of the display segment after paying operating costs, however it does not measure the totality of Google's benefit from its misconduct nor its ability to leverage its gains from this misconduct.

120. For example, in Google's display segment, the major operating cost included in internal profit and loss statements ("P&Ls") is its traffic acquisition cost ("TAC").<sup>305</sup> TAC

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<sup>304</sup> See Declaration of [REDACTED] in Support of Defendant Google LLC's Responses to Plaintiffs' Third Set of Interrogatories, May 24, 2024. See also Defendant Google LLC's First Amended Responses and Objections to Plaintiffs' Third Set of Interrogatories, Responses to Interrogatories 7, 8 and 10.

<sup>305</sup> See, for example, GOOG-DOJ-AT-02649870.

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Dated,

June 7, 2024



Jeffrey S. Andrien

**Ratio of State Internet Population to U.S. Internet Population**  
**2013 - 2023**

<b>State</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>
Alaska	0.22%	0.23%	0.25%	0.24%	0.23%	0.23%	0.23%	0.23%	0.22%	0.22%	0.22%
Arkansas	0.80%	0.79%	0.78%	0.81%	0.81%	0.83%	0.85%	0.82%	0.87%	0.87%	0.87%
Florida	5.69%	5.76%	6.37%	6.36%	6.42%	6.52%	6.58%	6.53%	6.60%	6.72%	6.72%
Idaho	0.52%	0.51%	0.52%	0.51%	0.52%	0.54%	0.56%	0.56%	0.58%	0.59%	0.59%
Indiana	2.03%	2.02%	1.98%	2.00%	2.00%	2.00%	1.99%	2.00%	2.03%	2.03%	2.03%
Kentucky	1.31%	1.29%	1.28%	1.31%	1.30%	1.31%	1.31%	1.30%	1.31%	1.32%	1.32%
Louisiana	1.30%	1.27%	1.31%	1.32%	1.30%	1.31%	1.32%	1.30%	1.32%	1.29%	1.29%
Mississippi	0.75%	0.76%	0.74%	0.80%	0.81%	0.82%	0.81%	0.79%	0.81%	0.82%	0.82%
Missouri	1.84%	1.82%	1.82%	1.84%	1.83%	1.83%	1.84%	1.81%	1.83%	1.82%	1.82%
Montana	0.31%	0.30%	0.32%	0.31%	0.32%	0.32%	0.32%	0.32%	0.33%	0.33%	0.33%
Nevada	0.87%	0.87%	0.92%	0.90%	0.91%	0.94%	0.93%	0.94%	0.95%	0.96%	0.96%
North Dakota	0.23%	0.23%	0.23%	0.23%	0.23%	0.22%	0.23%	0.23%	0.23%	0.23%	0.23%
Puerto Rico	0.67%	0.66%	0.73%	0.78%	0.76%	0.72%	0.78%	0.76%	0.84%	0.86%	0.86%
South Carolina	1.33%	1.33%	1.39%	1.45%	1.47%	1.49%	1.50%	1.48%	1.52%	1.55%	1.55%
South Dakota	0.27%	0.26%	0.26%	0.26%	0.26%	0.26%	0.27%	0.26%	0.26%	0.27%	0.27%
Texas	8.38%	8.40%	8.29%	8.52%	8.67%	8.70%	8.81%	8.80%	8.89%	9.04%	9.04%
Utah	1.02%	1.04%	1.01%	0.99%	1.00%	1.02%	1.03%	1.04%	1.04%	1.04%	1.04%
<b>Total</b>	<b>27.54%</b>	<b>27.55%</b>	<b>28.19%</b>	<b>28.63%</b>	<b>28.83%</b>	<b>29.07%</b>	<b>29.35%</b>	<b>29.18%</b>	<b>29.63%</b>	<b>29.96%</b>	<b>29.96%</b>

**Notes:** I apply 2022 ratios to 2023 as the U.S. Census Bureau has not yet released 2023 ACS data.

**Sources:** U.S. Census Bureau Population Estimates and American Community Survey (ACS).